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**FAX NO.:** 703-308-7751

**FROM:** Doran R. Pace

**DATE:** August 14, 2000

**NUMBER OF PAGES (INCLUDING COVER SHEET):** 5

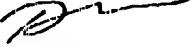
**SUBJECT/MESSAGE:**

Re: U.S. Patent Application Docket No. SPO-108  
Serial No. 09/508,342; filed March 10, 2000

Request for Correction of Filing Receipt (4 pages, with attachments)

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Doran R. Pace, Patent Attorney

REQUEST FOR CORRECTION OF  
FILING RECEIPT  
Examining Group 1646  
Patent Application  
Docket No. SPO-108  
Serial No. 09/508,342

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 1646  
Applicants : Yoshiyuki Sakaki, Hajime Tei  
Serial No. : 09/508,342  
Filed : March 10, 2000  
For : Mammalian Genes Involved in Circadian Periods

Assistant Commissioner for Patents  
Office of Initial Patent Examination  
Customer Service Center  
Washington, D.C. 20231

REQUEST FOR CORRECTION OF FILING RECEIPT

Sir:

Applicants respectfully request the correction of an error in the Official Filing Receipt for the above-identified patent application. Please send a corrected Filing Receipt with the following change:

The Filing Receipt lists the title of the application as:

MAMMALIAN GENES PARTICIPATING IN CIRCADIAN PERIOD

The word "PARTICIPATING" is incorrect. The correct word is "INVOLVED." Thus, the correct title of the subject application is:

MAMMALIAN GENES INVOLVED IN CIRCADIAN PERIOD

In addition, the Filing Receipt incorrectly lists the total number of drawings in the subject application as thirty one (31). The correct total number of drawings for the subject application is ten (10).

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Docket No. SPO-108  
Serial No. 09/508,342

A copy of the Filing Receipt containing the error, along with a copy of page 1 of the subject specification showing the correct title of the subject application, is attached.

Respectfully submitted,



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Attachments: copy of erroneous Official Filing Receipt with error noted thereon; copy of page 1 of the subject specification.

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**FILING RECEIPT****UNITED STATES DEPARTMENT OF COMMERCE  
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APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL. FEE REC'D	ATTY.DOCKET.NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/508,342	06/05/2000	1646	797	SP0-108	31 11	10	5

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JUL 24

Date Mailed: 07/20/2000

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the PTO processes the reply to the Notice, the PTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

**Applicant(s)**

YOSHIYUKI SAKAKI, KANAGAWA, JAPAN;  
HAJIME TEI, TOKYO, JAPAN;

**Continuing Data as Claimed by Applicant**

THIS APPLICATION IS A 371 OF PCT/JP98/04125 09/11/1998

**Foreign Applications**

JAPAN 9/267846 09/12/1997

If Required, Foreign Filing License Granted 07/19/2000

Title

INVOLVED

MAMMALIAN GENES PARTICIPATING IN CIRCADIAN PERIOD

**Preliminary Class**

435

Data entry by : BARRETO, NGA

Team : OIPE

Date: 07/20/2000

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- 1 -

SPO-108

## SPECIFICATION

### MAMMALIAN GENES INVOLVED IN CIRCADIAN PERIODS

#### 5 Technical Field

The present invention relates to mammalian genes whose expression changes with a circadian period.

#### Background Art

10 Many biochemical processes, physiological processes, and behavioral processes in various organisms ranging from microorganisms to vertebrates exhibit circadian rhythms (Edmunds, L. N. J., *Cellular and Molecular Basis of Biological Clock*, Springer-Verlag, New York, 1988). Several genes have been  
15 suggested to be involved in circadian rhythms.

For example, two mammalian circadian clock mutations have been confirmed thus far. They are *Clock* of the mouse (Viutaterna, M. H., et al., *Science* 264: 719-725, 1994) and *tau* of the hamster (Ralph, M. R. and Menaker, M., *Science* 241: 1225-1227, 1988). The *Clock* gene has recently been identified and is believed to encode a transcription factor in the circadian clock (Moor, R. Y. and Eichler, V. B., *Brain Res.* 42: 201-206: 1972; Stephan, F. K. and Zucker, I., *Proc. Natl. Acad. Sci. USA* 69: 1583-1586, 1972). On the other hand, the *tau* gene has not yet been cloned.

25 The *period* (*per*) gene has been isolated from *Drosophila* as a gene necessary for the expression of circadian rhythms for locomotive activities and eclosion behavior (Konopka, R. J. and Benzer, S., *Proc. Natl. Acad. Sci. USA* 68: 2112-2116, 1971). In the brain of the fly the oscillation of the levels of the *per* mRNA  
30 and of the PERIOD (dPER) protein are thought to determine the rhythms (Hardin, P. E., et al., *Nature* 343: 536-540, 1990; Zarr, D. M., et al., *J. Neurosci.* 10: 2749-2762, 1990). However, *per* homologues in other organisms than insects have not been identified.

#### 35 Disclosure of the Invention

An object of the present invention is to provide novel